



# ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: CFM56-2A series  
 UNIQUE ID NUMBER: 1CM001  
 COMBUSTOR:  
 ENGINE TYPE: TF

BYPASS RATIO: 6.0  
 PRESSURE RATIO ( $\pi_{00}$ ): 25.2  
 RATED THRUST ( $F_{00}$ ) (kN): 106.8

### REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NO <sub>x</sub>	SMOKE NUMBER
D <sub>p</sub> /F <sub>00</sub> (g/kN) or SN	3.5	59.5	49.6	10.2
AS % OF ORIGINAL LIMIT	17.8	50.5	54.9	43.7
AS % OF CAEP/2 LIMIT (NO <sub>x</sub> )			68.6	
AS % OF CAEP/4 LIMIT (NO <sub>x</sub> )			83.6	
AS % OF CAEP/6 LIMIT (NO <sub>x</sub> )			95.0	
AS % OF CAEP/8 LIMIT (NO <sub>x</sub> )			114.4	

### DATA STATUS

- PRE-REGULATION  
 x CERTIFICATION  
 - REVISED (SEE REMARKS)

### TEST ENGINE STATUS

x NEWLY MANUFACTURED ENGINES  
 - DEDICATED ENGINES TO PRODUCTION STANDARD  
 - OTHER (SEE REMARKS)

### EMISSIONS STATUS

x DATA CORRECTED TO REFERENCE  
 (ANNEX 16 VOLUME II)

### CURRENT ENGINE STATUS

(IN PRODUCTION, IN SERVICE UNLESS OTHERWISE NOTED)  
 x OUT OF PRODUCTION (DATE: - )  
 - OUT OF SERVICE (DATE: - )

### MEASURED DATA

MODE	POWER SETTING (%F <sub>00</sub> )	TIME (minutes)	FUEL FLOW (kg/s)	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
				HC	CO	NO <sub>x</sub>	
TAKE-OFF	100	0.7	1.114	0.04	0.90	20.40	7.9
CLIMB OUT	85	2.2	0.911	0.04	0.90	17.30	4.2
APPROACH	30	4.0	0.318	0.08	3.40	8.70	2.5
IDLE	7	26.0	0.130	1.13	23.50	4.30	2.0
LTO TOTAL FUEL (kg) or EMISSIONS (g)			446	242	5176	4571	-
NUMBER OF ENGINES				1	1	1	1
NUMBER OF TESTS				3	3	3	3
AVERAGE D <sub>p</sub> /F <sub>00</sub> (g/kN) or AVERAGE SN (MAX)				2.3	48.5	42.8	7.9
SIGMA (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)				0.4	2.5	0.8	0.6
RANGE (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)				1.82-2.63	47-51.4	42.3-43.7	7.3-8.5

### ACCESSORY LOADS

POWER EXTRACTION 0 (kW) AT - POWER SETTINGS  
 STAGE BLEED 0 (% CORE FLOW) AT - POWER SETTINGS

### ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	96-97.5
TEMPERATURE (K)	279-286
ABS HUMIDITY (kg/kg)	0.002-0.009

### FUEL

SPEC	Jet A
H/C	1.93
AROM (%)	16

MANUFACTURER: CFM International  
 TEST ORGANIZATION: CFM56 Evaluation Engineering  
 TEST LOCATION: Peebles Site IVD  
 TEST DATES: 11/11/1983-14/11/1983

### REMARKS

1. Ref GE Report R83AEB631.
2. Engine S/N 692441.
3. Applicable to CFM56-2A2 and -2A3.

Compliance with Fuel Venting requirements: - ('x' if complies, 'PR' if pre-regulation, '-' if information is not available)